使用说明目录

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安全事项 Safety instruction

- 在使用本产品之前，请先阅读《产品说明书》及所搭配的缝纫机机械说明书。
- Users are required to read the operation manual completely and carefully before installation or operation.
- 本产品必须由接受过专业培训的人员来安装或操作。
- The product should be installed and pre-operated by well trained persons.
- 请尽量远离电弧焊接设备，以免产生的电磁波干扰本控制器而发生误动作。
- Please keep away from arc welding equipment to avoid malfunction of control system caused by electromagnetic waves .
- 请不要在室温 45°以上或者 0°以下的场所使用。
- Do not use in places where the temperature is above45° or below 0° .
- 请不要在湿度 30%以下或者 95%以上或者有露水和酸雾的场所使用。
- Please do not operate at dew area or at the humidity below 30% or above 95%.
- 安装控制箱及其他部件时，请先关闭电源并拔掉电源插头。
- Please switch off the power and unplug before installing control box and other parts.
- 为防止干扰或漏电事故，请做好接地工程，电源线的接地线必须牢固的与大地有效连接。
- To prevent interference or leakage accidents,please make sure of grounding, and the grounding wire of the power cord must be firmly and effectively connected to the earth.
- 所有维修用的零部件，须由本公司提供或认可，方可使用。
- All spare parts for repairmen must be provided or approved by our company before using.
- 在进行任何保养维修动作前，必须关闭电源并拔掉电源插头。控制箱里有高压危险，必须关闭电源五分钟后方可打开控制箱。
- Before any maintenance and repair operations , the power must be switched off and the power plug must be unplugged. There is a high voltage danger in the control box. You must turn off the power for five minutes before opening the control box.

1 产品安装 Installation instructions

1.1 产品规格 Product specification

产品型号 MODEL No.	781G	电源电压 VOLTAGE	AC 220±20% V
电源频率 POWER FREQUENCY	50Hz/60Hz	最大输出功率 MAX.OUTPUT POWER	550W

1.2 接口插头的连接 Connection of interface and plug

将脚踏板及机头的各连接插头安插到控制器对应的插座上，各插座名称如图 1-1 所示。连接好，请检查插头是否插牢。

Insert the connecting plugs of the pedals and the machine head into the corresponding sockets of the controller. The names of the sockets are shown in Figure 1-1.Then pls check if the plug is inserted firmly.

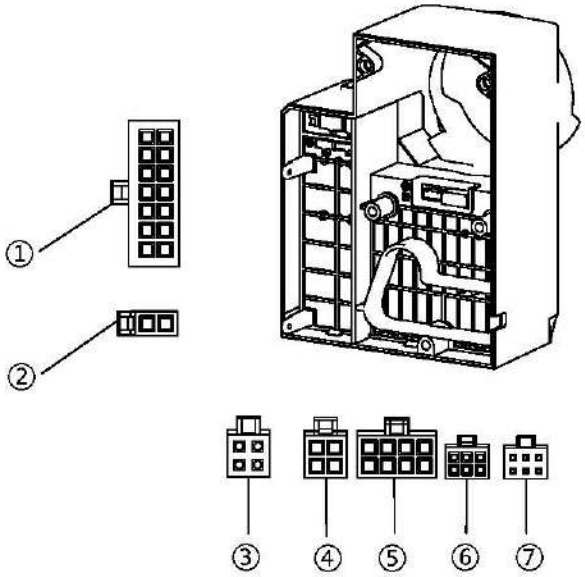
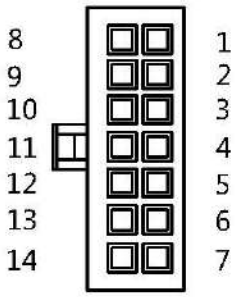


图 1-1　781G 控制器接口图

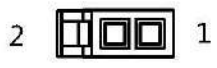
①步进电机&机头灯；②面线检测；　③面板通信接口；④行程传感器；
⑤大盘传感器；⑥脚踏板&升级接口；⑦底线检测&气动阀。

Figure 1-1 781G controller interface diagram

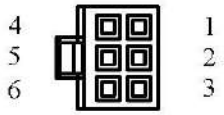
①stepping motor and headlight; ②upper thread detection; ③panel communication interface;
④stroke sensor; ⑤large gear sensor; ⑥interface for pedal and upgrading use;
⑦bottom line detection and pneumatic valve。



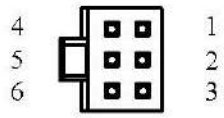
步进电机&机头灯			Step motor&machine head light
1	VDD	+30V	+30V
2	GND(+5V)	机头灯的地	Machine head light (GND)
3	-	-	-
4	-	-	-
5	GND(+5V)	步进限位传感器的地	Step motor location limit sensor (GND)
6	A+	步进电机A相动力线	Step motor A phase power wire
7	B+	步进电机B相动力线	Step motor B phase power wire
8	EM-QX	预留夹线电磁铁	Thread tension magnet (reservation)
9	+5V	机头灯5V	Machine head light 5V
10	-	-	-
11	+5V	步进限位传感器电源	Step motor location limit sensor power
12	STEP-Z	步进限位传感器	Step motor location limit sensor
13	B-	步进电机B相动力线	Step motor B phase power wire
14	A-	步进电机A相动力线	Step motor A phase power wire



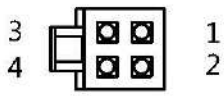
面线检测			Upper tread detection
1	MXS	面线断线检测信号	Upper thread breakage detection signal
2	-	-	-



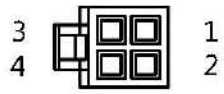
脚踏板&升级接口			Foot pedal&upgradation port
1	GND	5V数字地	5V(GND)
2	-	-	-
3	VCC	+5V	+5V
4	RX	UART通信接受	UART communication receive
5	TX	UART通信发送	UART communication send
6	PEDAL	脚踏板模拟信号	Foot pedal monitoring signal



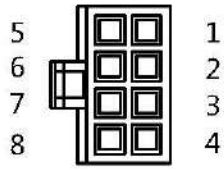
底线检测&气动阀			Bottom line detection&Pneumatic valve
1	VCC	24V	24V
2	-	-	-
3	VCC	-24V	-24V
4	QDF	气动阀	Pneumatic valve
5	GND	地	GND
6	DX-IN	底线检测信号	Bottom thread detection signal



面板通讯接口			Panel communication port
1	TX	主板发送	Main board send
2	GND	地	GND
3	RX	主板接收	Main board receive
4	VCC	L+5V	L+5V



行程传感器			Stroke sensor
1	GND	地	GND
2	-	-	-
3	VCC	L+5V	L+5V
4	XC	行程传感器信号	Route sensor signal



大盘传感器			Crank sensor
1	VCC	L+5V	L+5V
2	DPS3	预留大盘信号	Crank signal (reserved)
3	-	-	-
4	GND	地	GND
5	VCC	L+5V	L+5V
6	SC	大盘刹车信号	Crank braking signal
7	JS	大盘减速信号	Crank slow down signal
8	GND	地	GND

图 1-2　控制器接口定义

注：使用正常力量插不进去时，请检查插头与插座是否匹配，插入方向或针的方向是否正确！

Note: please check whether plug matches socket or not, or the pins direction is correct or not if can't connect with normal power!

1.3 接线与接地 Connect and grounded

必须要做好系统的接地工程，请合格的电气工程人员予以施工。产品通电及投入使用前，必须确保电源插座 AC 输入端已安全可靠的接地。系统的接地线为黄绿线，该地线请务必可靠连接至电网安全保护接地上，以保证安全使用，并可防止出现异常情况。

Please invite professional electrical engineer to make systematic grounding project. And make sure AC port was safely grounded before power on and operation. Grounded connection wire is yellow&green, make sure it's connected to power grid and grounded safely to avoid any abnormal situation.

注：所有电源线、信号线、接地线等接线时不要被其它物体压到或过度扭曲，以确保使用安全。

Note: make sure all power wires, signal wires, grounded wires etc are not covered or twisted to ensure its safety condition.

2 操作面板使用说明 Panel operation specifications

2.1 操作面板的显示说明 Panel display specifications

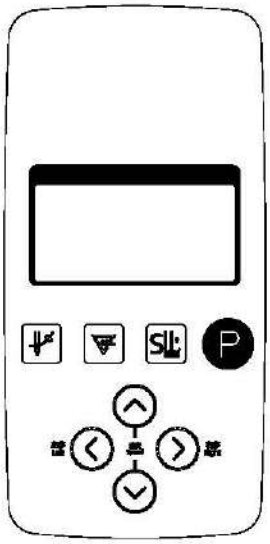


图 2-1 操作面板外观界面

Chart 2-1 Operation panel

2.2 液晶屏显示 LCD display

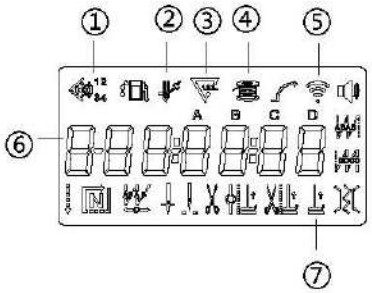


图 2-2 操作面板液晶显示屏图示

Chart2-2 LCD display of Operation panel

索引 NO.	图标 Icon	描述 Description	索引 NO.	图标 Icon	描述 Description
①		传感器状态 State of the sensor	⑤		物联网状态 State of the IOT
②		面线状态(报警时闪烁) State of the up thread(Flashing when alarming)	⑥		计数/参数值显示 Count/Parameter display
③		计数界面 Count interface	⑦		抬压脚状态(压脚抬起时图标亮，压脚放下时图标灭) State of the presser foot(icon bright when presser foot up, and out when presser foot down)
④		底线状态（报警时闪烁） State of the down thread (Flashing when alarming)	⑧	/	/

2.3 开机启动显示 Boot Screen

开机界面首先图标与数码管全亮，其次显示软件版本号 Vx.xx，最后显示待机界面。待机界面下机器解锁后电机未运行时界面显示跑马灯,当电机运行时显示当前缝纫速度和跑马灯。

Boot interface, first the icon and the digital tube will bright all, then shows software version Vx.xx and shows standby interface at last. In standby interface,if machine is unlocked, the interface will display the digital flash when the motor is not running, and the current sewing speed and digital flash will be displayed when the motor is running.

2.4 按键各按键功能说明 Function description of each button

序号 NO.	外观 Icon	名 称 Description	功能描述 Function Description
1		参数进入、返回键 Parameter entry and return key	1、 短按 P 键进入用户参数设置界面（待机界面时）; 2、 短按 P 键退回待机界面； 1. Short press P to enter the user parameter setting interface（on standby interface） 2. Short press P to return the idle screen
2		参数递增键 Parameter adding key	参数设定中，参数值递增键。（待机界面下速度加快捷键） When adjust the parameter，press this key to add the value of the parameter.
3		参数递减键 Parameter decrement key	参数设定中，参数值递减键。（待机界面下速度减快捷键） In parameter setting, the parameter value decrement key. (Shortcut key for speed reduction in the standby interface)
4		向左选择键 Left selection key	短按左移光标（参数调节、监控界面时） Short press. to move the cursor left (when parameter adjustment, monitoring interface
5		向右选择键 Right selection key	1、短按右移光标（参数调节、监控界面时） 2、按下右键开始吹气（待机界面时） 1. Short press, to move the cursor right(when parameter adjustment, monitoring interface) 2. Press the right button to start blowing (in standby interface)
7		参数保存/抬压脚键 Parameter save/presser foot lift key	1、短按 S/抬压脚键，锁机或解锁（待机界面时） 2、参数界面下短按 S/抬压脚键保存参数 1. Short press the S/presser foot button to lock or unlock the machine (in standby interface) 2. In the parameter interface, short press the S/presser foot key to save the parameters
8		面线键 Upper thread key	短按面线键，开启/关闭面线检测功能（待机界面时） Short press the upper thread button to turn on/off the upper thread detection function (in standby interface)
9		计锁眼数键 Keyhole counting key	短按计锁眼数键，进入/退出计锁眼数显示界面（待机界面时） Short press the keyhole count key to enter/exit the keyhole count display interface (in standby interface)

3 参数调节 Parameter adjustment

3.1 进入用户参数模式及保存 Enter user parameter mode and save

在待机界面下短按 P 键进入用户参数模式。按 〈 或 〉 移动光标，相应位数值闪烁，再按 ∧ 或 ∨ 修改该位数值，当参数值被修改后，短按 S止 键，保存参数并显示 "OK"。短按 P 键退出参数模式。

In the standby interface, short press the key to enter the user parameter mode. Press or to move the cursor, the corresponding digit value flashes, and then press or to modify the digit value. When the parameter value is modified, short press the key to save the parameter and display "OK". Short press key to exit parameter mode.

3.2 进入技术员参数模式及保存 Enter the technician parameter mode and save

按住 P 键+ S止 键开机进入技术员参数模式。参数调节方式同操作员参数调节方式。

Press and hold P key + S止 key to power on and enter the technician parameter mode. The parameter adjustment method is the same as the operator parameter adjustment method.

3.3 速度调节 Speed adjustment

在待机界面下，短按/长按参数递增键 ∧ 、参数递减键 ∨ 快速调速度。向上调快，向下调慢，每按一次调整数值 50 并自动保存。与内部调速参数 P01 显示一致。

In the standby interface, short/long press the parameter increment key ∧ and the parameter decrement key ∨ to quickly adjust the speed. Up to speed up, down to slow down, each time you press to adjust the value 50 and automatically save. The display is consistent with the internal speed control parameter P01.

3.4 恢复出厂设置 reset

在待机界面下，长按 〈 + 〉 ，作为恢复出厂设置的快捷方式，参数恢复成功后显示 "OK"。

In the standby interface, long press 〈 + 〉 as a shortcut to restore factory settings. After the parameters are restored successfully, "OK" is displayed.

3.5 计件功能设置 Piece counting function setting

在待机界面下，短按 键进入计锁眼数显示界面，计锁眼数显示界面下长按 键快速清零当前计数，按 或 移动光标，再按 或 增加或减少锁眼计数值。短按键或P键退出计锁眼数界面。

In the standby interface, shortly press the key to enter the keyhole count display interface, in the keyhole count display interface, long press the key to quickly clear the current count, press or to move the cursor, and then press or to increase or decrease the keyhole count. Short press or key to exit the buttonhole counting interface.

3.6 进入监控模式 Enter monitoring mode

在待机界面下，长按 P + 键进入监控模式，按 或 调整监控参数项，短按P键退出。（若为 24、26 项，长按 SET 键保存当前监控值为对应参数，保存成功后显示“OK”，短按P键退出监控模式）。

In the standby interface, long press the P + key to enter the monitoring mode, press or to adjust the monitoring parameter items, short press the key P to exit. (If it is 24 or 26, long press the key SET to save the current monitoring value to the corresponding parameter, after the save is successful, it will display "OK", short press the key P to exit the monitoring mode).

注：上停针位置设置：进入监控参数项 24，将手轮调整至上停针（参数会随着手轮位置而变化），长按 SET 键保存参数（保存后，下针位会自动进行相应调整），按 P 键退出监控模式。

Note: Up needle position setting: enter monitoring parameter number 24, adjust the handwheel to up needle position (parameter will change with the position of the handwheel), long press the key SET to save the parameter (after saving, the down needle position will automatically be adjusted accordingly), Press the key P to exit the monitoring mode.

3.7 参数表 Parameter list

3.7.1 用户参数表 User parameter list

参数项 Parameter item	参数定义 Parameter definition	默认值 Default	单位 Unit	范围 Range	备注 Note
P01	最高转速 Highest speed	3000	r/min	100-3600	
P03	切刀动作速度 Knife movement speed	800	r/min	100-3600	
P04	第一针限速 Speed limit for first stitch	800	r/min	100-3600	
P05	第二针限速 Speed limit for second stitch	1200	r/min	100-3600	
P06	第三针限速 Speed limit for third stitch	2000	r/min	100-3600	
P07	第四针限速 Speed limit for fourth stitch	2500	r/min	100-3600	
P08	第五针限速 Speed limit for fifth stitch	3600	r/min	100-3600	
P10	切刀动作针数 Knife movement stitch numbers	0	-	0-10	

3.7.2 技术员参数表 Technician parameter list

参数项 Parameter item	参数定义 Parameter definition	默认值 Default	单位 Unit	范围 Range	备注 Note
P16	保护针数 Protection stitch numbers	30	-	1-9999	大盘信号异常报警针数 Stitch numbers for big cam abnormal signal alarm
P17	开机自动找上针位 Automatically find up needle position when starting up	2	-	0-3	0：关闭；1：正转；2： 不下扎；3：区域不找 0：Off；1：Forward rotate； 2：No down stab； 3：Area not found
P18	上针位调节角度 Up needle position adjustment angle	25	°	0-359	
P24	机头保护开关 Machine head protection switch	1	-	0-1	0：关闭；1：开启 0：Off；1：Open；
P26	内部限速 Internal speed limit	3000	r/min	100-3600	
P27	锁眼计数开关 Keyhole count switch	1	-	0-1	0：关闭；1：开启 0：Off；1：Open；
P28	压脚最高位置步数 Number of steps at the highest position of the presser foot	480	-	0-800	
P29	压脚中间位置步数 Number of steps in the middle position of the presser foot	60	-	0-800	
P30	防止起缝切刀 Avoid start knife cutting	100	-	0-800	中途停止时，步进动作位置 When stopping halfway, stepping action position
P31	运行中后踩暂停开关 Back step on the pause switch when running	1	-	0-1	0：关闭；1：开启 0：Off；1：Open；
P32	启动时伺服等待时间 Servo waiting time at startup	20	ms	0-100	
P33	结束时步进提前角度 Stepping advance angle at the end	30	°	0-270	
P34	断线检测开关 Thread breakage detection switch	1	-	0-1	0：关闭；1：开启 0：Off；1：Open；
P35	底线检测开关 Bobbin thread detection switch	0	-	0-1	0：关闭；1：开启 0：Off；1：Open；

P36	锁眼计数单位 Buttonhole counting unit	1	-	1-100	
P37	锁眼计数总数 Buttonhole total counting quantity	9999	-	1-9999	
P38	调速器回中位置 Speed controller back to middle position	1340	-	0-4095	
P40	断线检测起缝延迟针数 Thread breakage detection starting delay stitch numbers	5	-	0-20	
P41	断线报警延迟针数 Thread breakage alarm delay stitch numbers	5	-	3-10	
P42	断线报警自动恢复时间 Automatic recover time of thread breakage alarm	0	0.01s	0-9999	如设置为0，则报警必须 手动短按P键解除 If set to 0, the alarm must be manually released by short pressing the P key
P44	底线用完报警自动恢复时间 Automatic recover time of bobbin thread finish alarm	0	0.01s	0-9999	如设置为0，则报警必须 手动短按P键解除 If set to 0, the alarm must be manually released by short pressing the P key
P45	吹气电磁阀保持时间 Solenoid blowing holding time	20	0.01s	0-9999	如设置为0，则关闭吹气功能 If set to 0, means blowing function off
P46	吹气频率 Blowing frequency	100	-	1-9999	每锁多少眼吹气一次 Number of Button hole finish then blowing one time
P47	底线用完预报警后继续锁眼个数 Number of Button hole after bottom thread finish Pre-alarm	0	-	0-10	如设置为0，则信号到后当前锁眼缝制完立即报警无预报警功能，不为0则当前锁眼缝制完进行预报警 If set to 0, then warning after finished current button hole, without pre-alarming. If not set with 0, then pre-alarming after current button hole
P48	预报警自动解除针数 Number of stitches for pre-alarm automatic release	10	-	0-100	预报警后检测确认有底线则自动解除预报警；如设置为0，则预报警无法自动解除 After the pre-alarm is detected and confirmed that there are bottom thread, the pre-alarm will be automatically released; if set to 0, the pre-alarm cannot be automatically released
P49	物联网功能开关 IoT function switch	0	-	0-1	0：关闭；1：开启 0：Off；1：Open；

P50	物联网通讯信道 IoT communication channel	1	-	0-30	
P61	测试工作时间 Test working time	3	s	1-100	
P62	特殊工作模式选择 Special working mode selection	0	-	0-6	0：正常 2：初始角测试 3：传感器检测停止跑合模式 4：一直运行跑合模式 5：循环启动-停止跑合模式 6：车间用跑合模式（工装测试用，请勿在机头上使用该模式） 0: Normal 2: Initial angle test 3: Sensor detection stop running-in mode 4: Keeping running-in mode 5: Cycle start-stop running-in mode 6: Running-in mode for workshop (for tooling test, please do not use this mode on the machine head)
P63	测试停止时间 Test stop time	2	s	1-100	
P65	电控参数操作 Electronic control parameter operation	0	-	0-4	0：无操作 1：恢复参数为电控出厂参数 2：恢复参数为研发出厂参数 3：恢复用户自定义参数 4：保存用户自定义参数 0: No operation 1: Restore the parameters to the factory parameters of the electronic control 2: Restore parameters to R&D factory parameters 3: Restore user-defined parameters 4: Save user-defined parameters

3.7.3 监控参数表 Monitoring parameter table

参数项 Parameter item	参数描述 Parameter description	参数项 Parameter item	参数描述 Parameter description	参数项 Parameter item	参数描述 Parameter description
M10	针数计数 Needle counting	M22	相电流 Phase current	M39	传感器信号1 (千位:限位信号；百位:行程信号；十位：底线检测信号；个位：面线检测信号；) Sensor signal 1 (Kilobit: limit signal; Hundred bit: travel signal; Ten bits: bottom line detection signal; Lndividual bit: surface line detection signal;)
M11	锁眼计数 Button hole counting	M23	初始角度 Initial angle		
M13	面板主副版本号 Panel version number	M24	机械角度 Mechanical angle		
M18	电控主副版本号 Control-box version number	M26	踏板回中模拟量采样值 Sampling value of pedal return analog	M40	传感器信号2 (千位:预留；百位:预留；十位：停车块信号；个位：减速块信号；) Sensor signal 2 (Kilobit: reserved; Hundred bit: reserved; Ten bits: stop signal; Lndividual bit: deceleration block signal;)
M20	母线电压 Bus voltage	M29	交流电压 AC voltage		
M21	机头速度 Machine head speed	M30-M37	历史故障代码 Historical fault code		

4 错误代码 Error code

4.1 故障代码表 Fault code table

若系统出现报错或报警，请首先检查如下项：

If an error or alarm occurs in the system, please check the following items first:

1、 先确认机器的连接线是否连接完好；

2、 2 确认电控和机头是否匹配；

3、 3 确认恢复出厂是否准确。

1. First confirm whether the connection line of the machine is well connected;

2. Confirm whether the electric control and the machine head is matched;

3. Confirm whether the factory restoration is accurate.

故障代码 Error Code	代码含义 Description	解决措施 Solution
Err-01	硬件过流 Hardware overcurrent	关闭系统电源，30 秒后重新接通电源，控制器若仍不能正常工作，请更换控制器并通知厂方。 Turn off the power switch, and restart after 30 seconds. If the controller still does not work, please replace it and inform the manufacturer.
Err-02	软件过流 Software overcurrent	

Err-03	系统欠压 Under-voltage	断开控制器电源，检查输入电源电压是否偏低（低于 154V）。若电源电压偏低，请在电压恢复正常后重新启动控制器。若电压恢复正常后，启动控制器仍不能正常工作，请更换控制器并通知厂方。 Disconnect the power to the controller; check the input power supply voltage is low or not (less than 154V). If the power supply voltage is low, please start the controller after recovers the voltage. If the controller still does not work, please inform the manufacturer and replace the controller.
Err-04	停机时过压 Over-voltage when the machine is off	断开控制器电源，检查输入电源电压是否偏高（高于 264V）。若电源电压偏高，请在电压恢复正常后重新启动控制器。若电压恢复正常后，启动控制器仍不能正常工作，请更换控制器并通知厂方。 Disconnect the controller power and check if the input voltage is too high (higher than 264V). If yes, please restart the controller when the normal voltage is resumed. If the controller still does not work when the voltage is at normal level, please replace the controller and inform the manufacturer.
Err-05	运行时过压 Over-voltage in operation	
Err-06	步进感应异常 Step sensing abnormal	关闭系统电源，检查步进位置是否在原点附近，同时检查步进电机连线是否正确，是否有松动、破损等现象。若有则及时更换。确认无误后重启系统，若仍不能工作，请更换控制器并通知厂方。 Turn off the system power.Check whether the stepping position is near the origin, and check whether the stepping motor connection is correct, whether there is looseness, damage, etc. If so, replace it in time. Restart the system after confirming that it is correct. If it still does not work, please inform the manufacturer and replace the controller.
Err-07	电流检测回路故障 Current detection circuit failure	关闭系统电源，30 秒后重新接通电源观察是否能正常工作。重试几次，若该故障频繁出现，请更换控制器并通知厂方。 Turn off the system power, restart after 30 seconds to see if it works well. If such failure happens frequently ,please inform the manufacturer and replace the controller.
Err-08	电机堵转 Sewing motor blocked	断开控制器电源，检查电机电源输入插头是否脱落、松动、破损，是否有异物缠绕在机头上。排除后重启系统仍不能正常工作，请更换控制器并通知厂方。 Turn off the system power. Check whether the motor power input plug is off, loose or broken, or there is something tangled on the machine head. Please make them correct then restart the system. If it still does not work, please inform the manufacturer and replace the controller.
Err-09	大盘保护 Crankset protection	断开控制器电源，检查大盘信号连接线是否脱落、松动、断裂。排除后重启系统仍不能正常工作，请更换控制器并通知厂方。 Disconnect the power supply of the controller, and check whether the signal connection line of the crankset is off,

		loose or broken. After troubleshooting, restarting the system still does not work normally, please inform the manufacturer and replace the controller.
Err-10	HMI 通讯故障 HMI Communication failure	检查控制面板与控制器的连线是否脱落、松动、断裂，将其恢复正常后重启系统。若仍不能正常工作，请更换控制器并通知厂方。 Check carefully, if the connection between the control panel and controller is off, loose, or broken, please make it correct then restart the system, if it still does not work, please inform the manufacturer and replace the controller.
Err-12	电机初始角度检测故障 Initial motor electrical angle failure	请断电后再尝试 2-3 次，若仍报故障，请更换控制器并通知厂方。 - Try 2 to 3 more times after power down - if it still does not work, please replace the controller and inform the manufacturer.
Err-13	电机光编码器信号丢失故障 Motor optical encoder signal loss failure	关闭系统电源，检查电机传感器接头是否松动或脱落，将其恢复正常后重启系统。若仍不能正常工作，请更换控制器并通知厂方。 Turn off the system power, check if the motor sensor plug is loose or dropped off, restore it and restart the system. If it still does not work, please replace the controller and inform the manufacturer.
Err-14	主板读写 EEPROM 故障 DSP Read/Write EEPROM failure	关闭系统电源，30 秒后重启系统，若仍不能正常工作，请更换控制器并通知厂方。 Turn off the system power, restart the system after 30 seconds, if it still does not work, please replace the controller and inform the manufacturer.
Err-15	伺服电机超速保护 Motor over-speed protection	
Err-16	伺服电机反转 Motor reversion	
Err-19	电机类型不匹配 Motor type does not match	关闭系统电源，检查电机传感器接头是否松动或脱落，将其恢复正常后重启系统。若仍不能正常工作，请更换控制器并通知厂方。 Turn off the system power, check whether the motor sensor connector is loose or fall off, restore it to normal and restart the system. If it still does not work, please replace the controller and notify the factory.
Err-20	调速器异常 Governor abnormal	请检查脚踏板是否复位，同时检查调速器插件/插针是否有松动或者脱落； 如果不能消除错误，请更换调速器；如果还不能消除错误，可能电控调速器信号异常，请更换控制器并通知厂方。 Please check whether the pedal is reset, and check whether the governor plug-in/pin is loose or falling off;

		If the error cannot be eliminated, please replace the governor; if the error cannot be eliminated, the signal of the electrical control governor may be abnormal. Please replace the controller and notify the manufacturer.
Err-21	步进硬件过流 Stepping hardware overcurrent	关闭系统电源，30 秒后重新接通电源，控制器若仍不能正常工作，请通知厂方。 Turn off the power of the system and turn on the power again after 30 seconds. If the controller still does not work normally, please notify the factory.
Err-22	步进软件过流 Step software overcurrent	
Err-23	步进电流检测回路故障 Step current detection circuit fault	
Err-25	大盘信号 1 异常，减速块 Market signal 1 is abnormal, deceleration block	断开控制器电源，检查大盘接线是否异常，确认接线无异常后开机，启动控制器仍不能正常工作，请更换控制器并通知厂方。 Disconnect the power supply of the controller, check whether the wiring of the main board is abnormal, and turn on the power after confirming that there is no abnormality in the wiring, and the controller still cannot work normally after starting. Please replace the controller and notify the factory.
Err-26	大盘信号 2 异常，停车块 Market signal 2 is abnormal, parking block	
Err-27	步进板通讯故障 Stepping board communication failure	检查步进板和电控的连线是否脱落、松动、断裂，将其恢复正常后重启系统。短按 P 键可以清除报错。 Check whether the connection between the stepping plate and the electric control falls off, becomes loose or breaks, and restart the system after restoring it to normal. Short Press The P key to clearly report an error.

4.2 安全报警表 Security Alarm Table

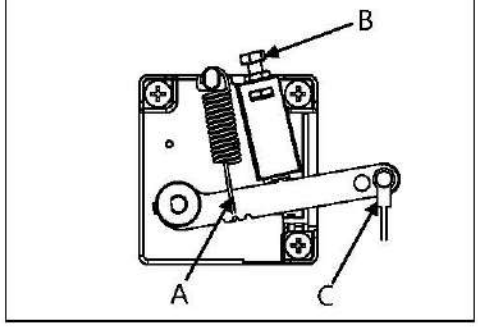
报警代码 Alarm code	代码含义 Code meaning	解决措施 solution
ARM UP	翻抬开关报警 Flip switch alarm	摆正机头，确保翻抬开关复原 Straighten the head of the machine to ensure that the flip switch is restored
ALR-3	计锁眼数报警 Count the number of keyholes and alarm	表示计锁眼数已达到所设上限，短按 P 键可取消报警并重新计数 Indicates that the number of keyholes in the count has reached the set upper limit, short press the P key to cancel the alarm and restart the count
ALR-4	底线用完报警 Alarm when the bottom line runs out	更换底线，短按 P 键取消报警 Change the bottom line, short press the P key to cancel the alarm
底线状态图标闪烁 The bottom line status icon flashes	底线用完预报警 Pre-alarm when the bottom line runs out	更换底线 Replace the bottom line
ALR-7	面线断线报警 Upper thread break alarm	检查面线是否断线，短按 P 键取消报警 Check whether the upper thread is broken, short press the P key to cancel the alarm

5 安装说明 Installation instructions

5.1 控速器踏板拉力的调整 Speed control pedal pull adjustment

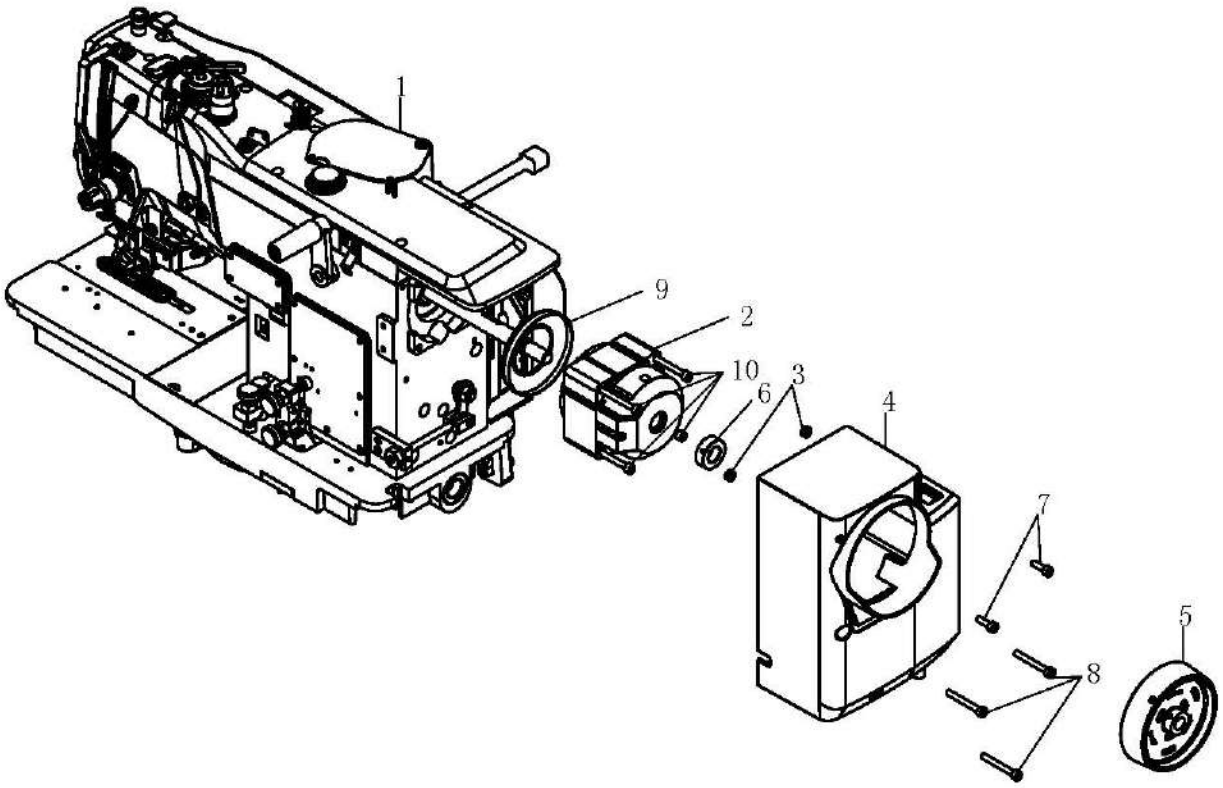
一般安装示意图

For General Application



A:前踏拉力弹簧
Spring A:Downward force Adjustment
B:后踏紧度制退的调整螺丝组
Bolt B:Heeling back force Adjustment
C:踏板旋臂拨杆挂钩孔
Hole C:Pedal stroke Adjustment

5.2 一体化电控安装操作说明 Integrated electronic control installation instructions



1：机头 machine head
2：无壳电机 Caseless motor
3：橡胶垫圈×2 Rubber washer×2
4：电控 Electric control
5：手轮 Handwheel
6：电机防尘罩 Motor dust cover
7：上紧固螺钉×2 Upper fastening screw×2
8：中、下间紧固螺钉×3 Middle and bottom fastening screws×3
9：电机绝缘防护罩 Motor insulation shield
10：电机紧固螺钉 Motor fastening screw×4

安装说明：Installation Notes

一、 把无壳电机 2 出线口方向朝上，将电机套入主轴，上电机四个固定螺钉，电机定位同心棒转动灵活、无卡点，再将转子装到上轴上，注意主轴上的平面和转子平面的方向关系（转子定位），拧紧固定螺钉，在转子上装上光栅片，注意转子上的平面和光栅平面的方向关系（光栅定位），预紧固定螺钉，再安装编码器电机盖，调整光栅片居于编码器中间位置，拧紧光栅固定螺钉，再装上电机上盖，拧紧电机盖固定螺钉，最后装上电机防尘罩 6，拧紧固定螺钉，电机安装完毕。

Put the direction of the outlet of the caseless motor 2 upwards, insert the motor into the main shaft, and install the four fixing screws of the motor. The motor positioning concentric rod rotates flexibly and has no stuck points. Then install the rotor on the upper shaft. Pay attention to the main shaft The direction relationship between the plane of the rotor and the plane of the rotor (rotor positioning), tighten the fixing screws, install the grating sheet on the rotor, pay attention to the direction relationship between the plane on the rotor and the grating plane (grating positioning), pre-tighten the fixing screws, and then install the encoder motor Cover, adjust the grating sheet in the middle of the encoder, tighten the grating fixing screws, then install the motor cover, tighten the motor cover fixing screws, and finally install the motor dust cover 6, tighten the fixing screws, and the motor is installed.

二、 取电控放置于电机旁，抽出电控上的编码器线插至电机编码器口，再取电机电源线头和电控电源口对接，在电控内部穿上紧固 7，电控上在装上橡胶垫圈 3。

Take out the electric control and place it next to the motor, pull out the encoder wire on the electric control and insert it into the encoder port of the motor, then take the power cord of the motor and the electric control power port to connect, put on the fastening 7 inside the electric control, on the electric control Then install the rubber gasket 3.

三、 将电控 4 的电机室对准电机慢慢套入机头，调整两条连接线置于电控右端，完全套入后穿入电控中间紧固螺钉 8 不打紧，旋转上紧固螺钉与机头螺孔连接不打紧，再穿入电控下紧固螺钉 8，检查并调整电控轮廓与机头轮廓配合适当，依次打紧螺钉 8、螺钉 7，电控安装完毕。

Align the motor room of the electric control 4 with the motor and slowly insert it into the machine head, adjust the two connecting wires to the right end of the electric control, and insert them into the middle of the electric control. Rotate the upper fastening screw and the screw hole of the machine head without tightening, and then insert the fastening screw 8 under the electric control, check and adjust the electric control contour and the machine head contour to match, tighten the screw 8, screw 7 in turn, and install the electric control complete.

四、在电机后轴上套上手轮5，注意定位螺钉与轴平面对齐上紧。

Put hand wheel 4 on the rear axle of motor, pay attention to the positioning screw axis plane aligned

在运行你的锁眼机之前，请仔细阅读本使用说明书内的指令并以正确、有效的方式里操作它。

Before operating your lockstith machine, please read this indtruction manual carefully in order to operate it in the correct and efficient manners.

运行中警告 Cautions in operation

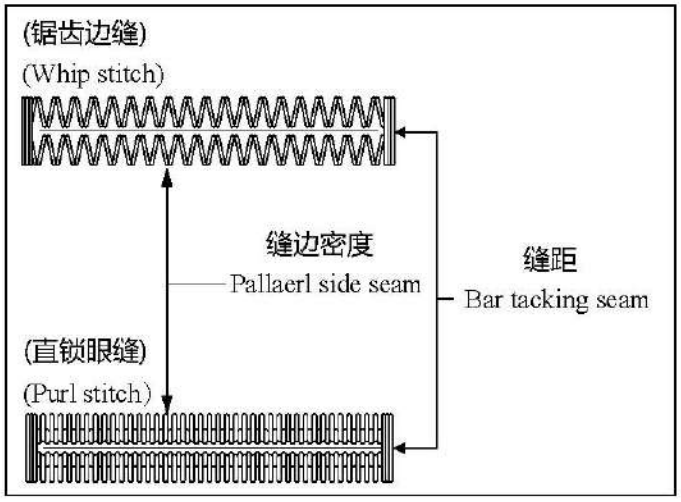
1. 机器从滑轮的正面观察应该逆时针方向旋转，注意不要让缝纫机反方向旋转。
2. 在没有加油之前，不允许开动机器。
3. 在试运行前，请从机器中拿出线轴箱和针线。
4. 每天在缝工作之后应及时清理缝钩和机器线轴，另外应经常检查缝纫机油的油量。
5. 为防止人身事故的发生，缝纫机在运行戒电机在转动过程中，请不要将手指、头发、衣服等靠近手轮，也不要把任何东西放到机器上。
6. 如果你的机器配有封带， 为了保护你的手指和和眼睛，在进行操作前，请将它们除去。

1. The machine should rotate counterclockwise as observed from the pulley. Take care not to rotate the machine in the opposite direction.
2. Never start the machine before filling the machine base with lubricating oil.
3. Remove the bobbin case and the needle thread from the machine before performing the trial operation.
4. Clean up the sewing hook and the bobbin thread trimmer every day after sewing work. Also check the level of the lubricating oil.
5. Never bring your fingers or hair close to, or place anything on the hand wheel during operation. It may lead to serious peraonal injuries.
6. If your machine is provided with a belt cover, finger guard and eye guard, never operate your machine with any of them removed.

6 规格 Specification

型号 Model	JK-T781G	JK-T782G	JK-T783G	JK-T781GX	JK-T781GK
用途 Use	棉纺、化纤等织物钮孔的缝锁 Sewing lock of button hole on cotton and chemical fiber fabrics				针织 Knitting
钮孔长度 Buttonhole length	22mm	33mm	40mm	22mm	22mm
缝迹宽度 Stitch width	2.5~4mm	2.5~5mm	2.5~5mm	2.5~4mm	2.5~4mm
切刀长度 Cutter length	6.4~19mm (1/4"~3/4")	6.4~25.4mm (1/4"~1")	6.4~31.7mm (1/4"~1 1/4")	6.4~19mm (1/4"~3/4")	6.4~19mm (1/4"~3/4")
缝纫机转速 Speed of sewing machine	100~3600 转/分 100~3600 rpm				
针杆行程 Needle bar stroke	34.6mm				
压脚高度 Presser foot height	10mm				
机针 Needle	DP×5（#11~#14）				
加油方式 How to add oil	全自动加油 Fully automatic				
缝制厚度 Sewing thickness	4mm				
针数 Stitches	G(225,83) J(190,100) L(170,110) N(152,123)				

7 线迹形式 Types of stitches



本缝纫机有两种线迹形式，它们是：
锯齿边缝和直锁眼缝

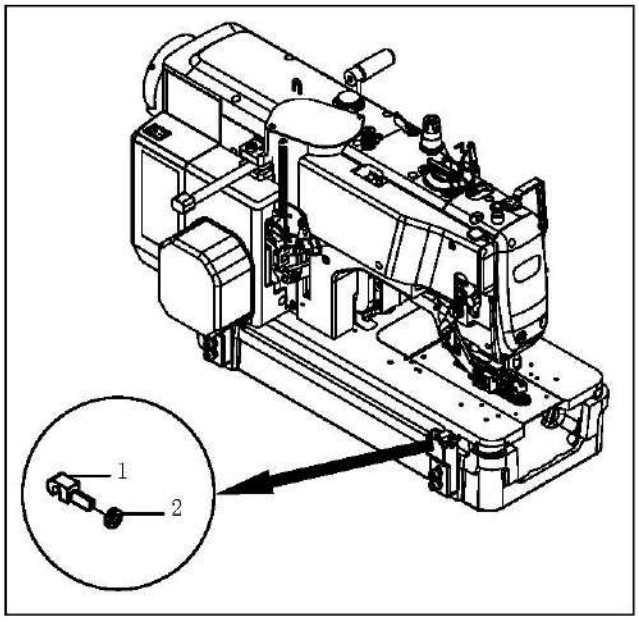
1、 锯齿边缝：
布的表面只有上线，背面是底线的锯齿状线迹。

2、 直锁眼缝：
增强上线张力，上线直线通过，底线左右锁缝的线迹

This machine is capable of forming two different types of stiches,namely whip stitch and purl stitch.

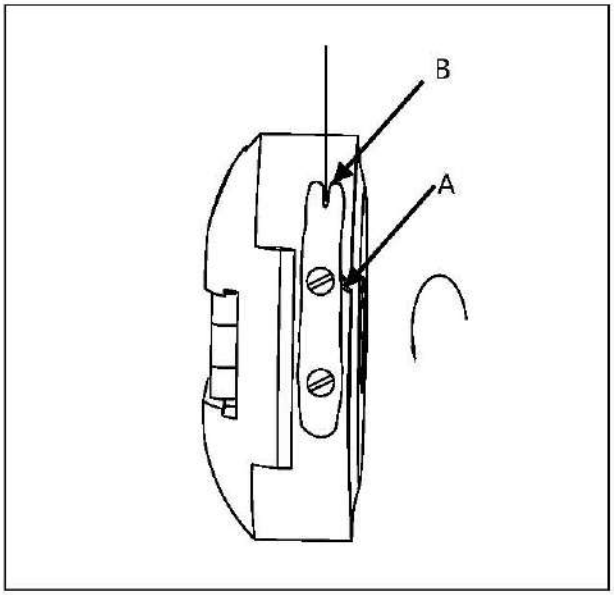
1. Whip stitch
The whip stitch is formed in zigzag showing the needle thread only on top of fabric, and the bobbin thread on the bottom.
2. Purl stitch
When applying higher tension to the needle thread to permit it to pass straight through fabric, the purl stitch is formed by the bobbin thread which is pulled over from both sides to the center line.

8 缝纫机头的安装 Setting up the machine head



将铰链钩①装入机头。然后将机头放在机座上。
Insert hinge ① into machine head.
Then, place the machine head on the machine base.
不得抬压电控部位及剪线部件。
Do not press the electric control part and therad cutting parts.

9 梭心的安装方法 Attaching the bobbin

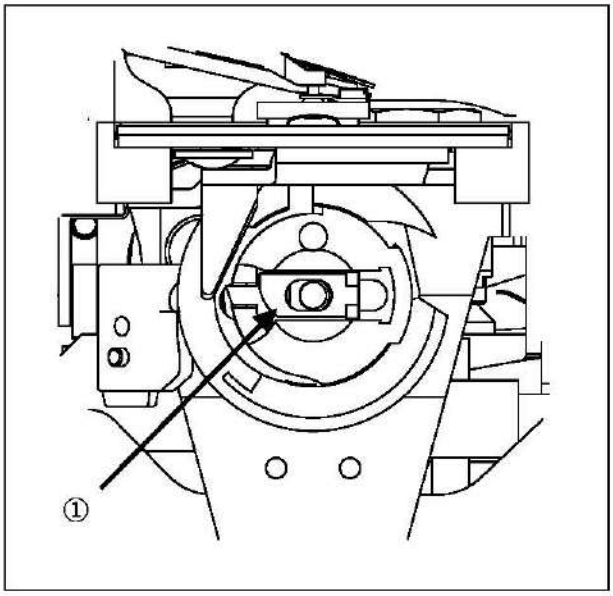


1、手拿梭心，让线往左绕的方向，把它放入梭壳。
2、把线穿过梭壳的穿线口 A，然后把线往 B 方向拉，从线张力弹簧下面的穿线口 B 拉出来。
★ 拉底线 C，确认底线是否梭心与箭头的方向相同。

1. Hold and place a bobbin into the bobbin case so that the bobbin is wound counter clock wise.
2. Passing the thread through thread outlet A of the bobbin case, pull the thread, and the thread can be drawn out form thread outlet B, passing under the bobbin winder tension spring.

★ Set the bobbin so that it rotates in the arrow direction when the bobbin thread is pulled.

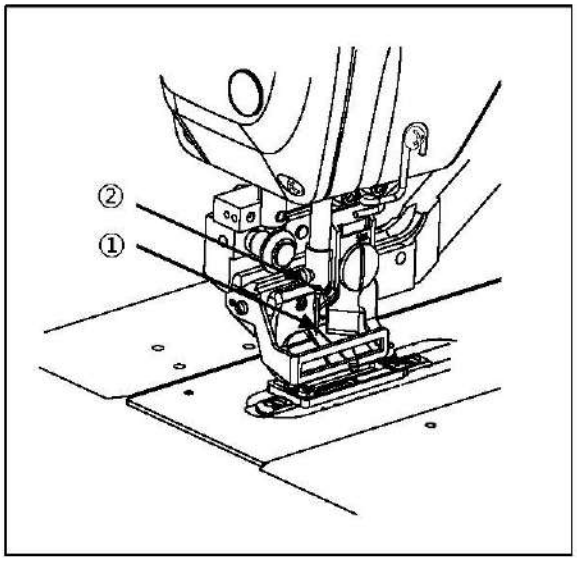
10 梭壳的安装方法 Installation/Removal of bobbin case



1、撬起梭壳扣爪①，取下梭壳。撬起扣爪拿旋时梭心不会掉出来。
2、安装时请把梭壳插到底，扣爪闭上。

1. Life up and hold bobbin case latch lever ① between two fingers to remove it from the hook. A bobbin does not fall off the bobbin case while the latch lever is lifted up.
2. For installation of the bobbin case, push the bobbin case into the hook so that it is supported by the hook shaft, and then snap in the latch lever.

11 机针的安装方法 How to install the needle



★ 切断电源。使用 DP×5机针

1、 拧松机针固定螺丝②，手拿机针，把机针①凹部横向转到前侧。

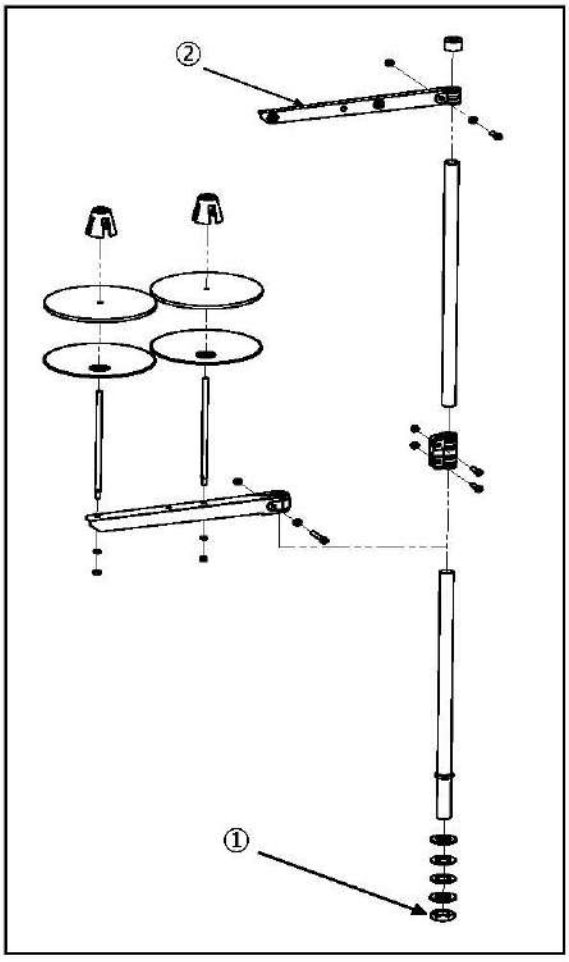
2、 然后把机针插进针杆孔的深处。

3、 拧紧机针固定螺丝。

★ Turn off the motor power.Use a DP×5 needle

1. Loosening needle setscrew ②, hold needle ① with its recessed part facing toward the operator.
2. Insert the needle fully into the needle clamping hole.
3. Securely tighten the needle setscrew.

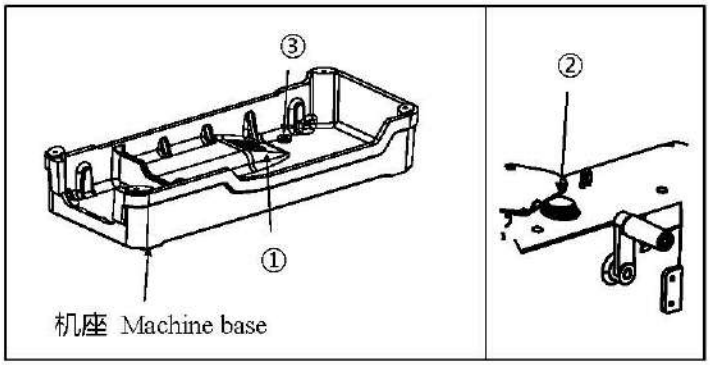
12 线架的安装方法 Serring up the thread stand

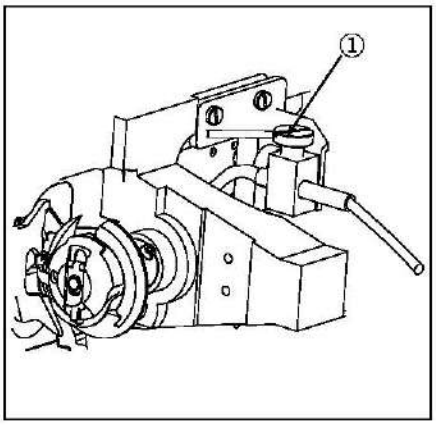


把立式线架放入台板孔，拧紧螺母①固定在台板上。调整配线的高度，让电源线从杆②中穿过。

Assenble the thread stand, and fix it in the table, Then tighten lock nut ① to fix the thread Stand. If ceiling wiring can be made, pass the power Cable through spool rest rod ②.

13 加油 Lubrication





1、 把10#工业白油加入到油槽，加到 HIGH 标记
2、 油量低于游标①时，应往油槽里加油。
3、 当机器正常运转时可以通过油视窗②看到机油。
(低速运转时油量会少一些。)
★ 油脏污之后，请拧松放油螺丝③排出脏油，并换新机油。

Before starting the machine

1. Fill the oil reservoir of the maching base with Industrial white oil up to the level indicated by "HIGH".
2. Supplement the oil when the oil level has lowered Below the bottom line of oil gauge ①.
3. When the maching has been properly lubricated, the oil is seen to run through the pipe from oil sight window ② (Low speed operation premits easier observation of the lubricating oil)

★ Drain dirty oil by loosening oil drain screw ③ and fill The oil reservoir with fresh oil.

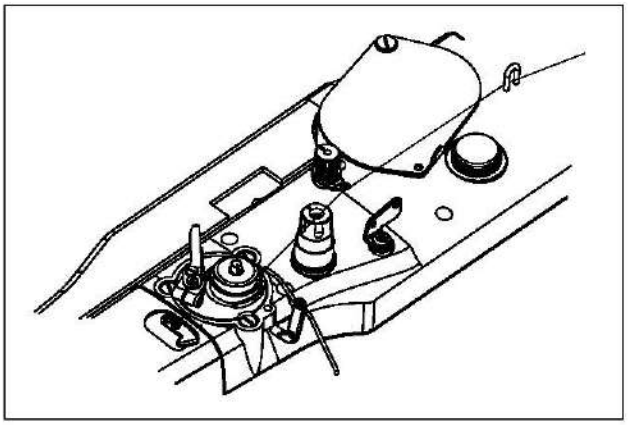
★ 旋梭油量的调节

用调节螺丝①调节大旋梭的油量，把调节螺丝往里拧油量变少，往外拧油量变多。

★ Adjusting the lubrication for the sewing hook

Adjust the volume of lubricating oil supplied to the sewing hook by turning oil adjusting screws ① for rough adjustment, oil volume is reduced when turnung the screws clockwise.

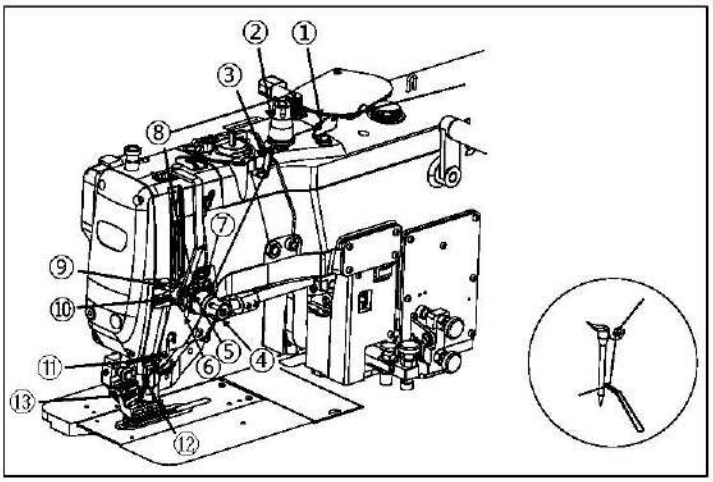
14 底线的绕线方法 Winding the bobbin



1、把梭心插到绕线轴上。
2、如图所示进行穿线，并把线在梭心上绕几圈。

1. Fit a bobbin onto the bobbin winder shaft.
2. Take the thread from the spool and pass it through the guides in the numerical order shown in the figure, and wind the end of the thread several turns around the bobbin.

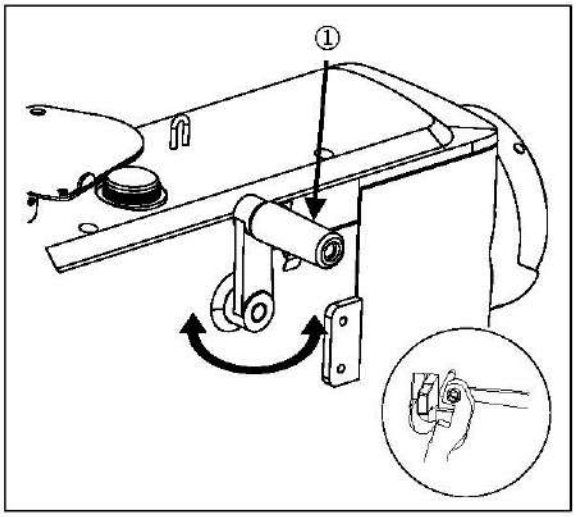
15 上线的穿线方法 Threading the needle-thread



1、 如图所示穿上线。
2、 穿线时，使用附属的穿线器穿线非常方便。

1. Pass the needle thread in the order as shown in the figure.
2. The threading can be done easily by using the needle threader supplied with the machine.

16 手动送布手柄 Manual feed handle



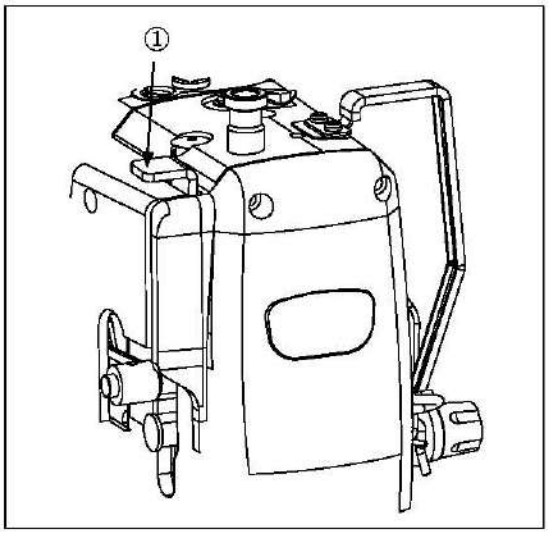
紧急停止后，或中途线断后，再次开始缝纫时，转动手动送布手柄①送布机构就开始动作。
(注意)①手动送布应在确认机针没有扎到布之后再转动。
② 转动手轮时要做半圈的前后转动，如遇到卡住转不动时，请检查刀杆传动杆(确保刀杆传动杆脱离刀杆传动杆曲柄)。

When you wand to feed fabric manually after giving an emergency stop or to resume sewing from the pint at which thread was broken, rotate manual feed handle ① to operate the cloth feeding mechanism.

(NOTE) ①Confirm that the needle does not stick in fabric before turning the manual feed handle.

②When turning the handwheel,turn it back and forth for half a turn.If it is stuck and cannot be turned, please check the driving lever of knife bar (make sure the driving lever of knife bar is separated from the driving crank of knife bar).

17 防止切刀掉落 How to hold the descending knife

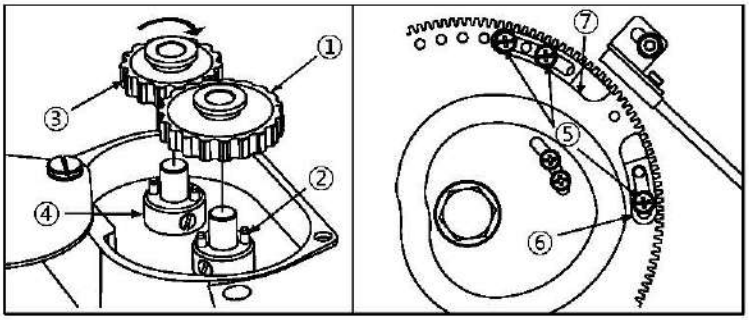


紧上线和底线被切断时，或不想让刀落下时，在缝纫机停止之前把固定拨杆①轻轻向下按压。切刀就不会下落。

When you do not want to cut fabric after sewing because of thread breakage or some other reasons, keep on pressing down knife stop lever ① lighrly until the machine stops.Then the knife will not desend.

18 针数的变换方法 Changing the number of stitches

代号 Symbol	小齿轮针号 No. of stitches of small gears	大齿轮针号 No. of stitches of large gears	代号 Symbol	小齿轮针号 No. of stitches of small gears	大齿轮针号 No. of stitches of large gears
A	54	345	I	93	200
B	62	300	Ⓙ	100	190
C	66	285	K	105	180
D	70	268	Ⓛ	110	170
Ⓔ	74	252	M	115	160
F	79	238	Ⓝ	123	152
Ⓖ	83	225	O	130	145
H	88	212			



★ 更换齿轮

1、 更换齿轮，可以变为表中所述的针数。

2、 齿轮上均刻有 A、B、C...的英文字母和 123、156 的数字。

3、 用英文字母相同的齿轮进行组合。

4、 后面安装的齿轮上刻的数字表示此时的针数。(○里的为标准附属品。其他则为另外订购零件。)

★ 齿轮的安装

1、 从操作人员方面看，把齿轮①插进面前的更换齿轮座②的铰链上。

2、 把齿轮③向箭头方向转动，插进后面的更换齿轮座④的铰链。

★ 减速凸轮位置的调整

1、 拧松固定螺丝⑤，调整减速凸轮⑥的位置。

★ 停车凸轮位置的调整

1、 拧松固定螺丝⑤，调整停车凸轮⑦的位置。

★ Spur gears

1. By selecting the spur gears, you can control the number of stitches as shown in the table.
2. Alphabetical marks like A, B, C, etc, and numerals like 123, 152, etc are both engraved on each spur gear for identification.
3. Use a combination of gears which have the same alphabetical marks.
4. The numeral engraved the gear installed in the rear position will represent the number of stitched provided by the then combination of spur gears.(The circled alphabetical symbols in the above table show that the gears are included in the standard accessories. All other gears are optional attachments.)

★ Attaching the spur gears to their shafts

1. Push gear ① into the shaft so that it is securely fixed by the pin on gear bushing ② located nearer to an operator.
2. For installing gear ③ on the pin of rear gear bushing ④, push gear ③ into the shaft while turning it in the arrow direction.

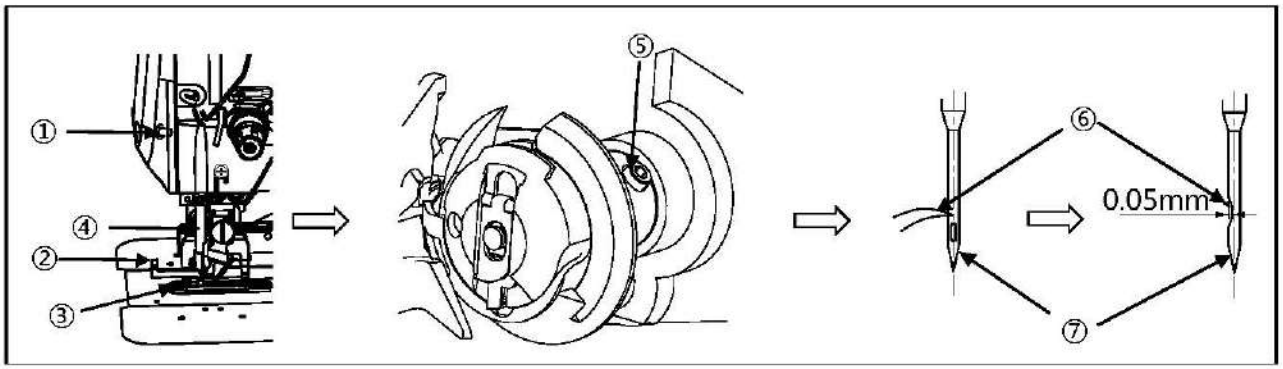
★ Adjusting the deceleration cam position

1. Loosen setscrews ⑤, and adjust the position of deceleration cam ⑥.

★ Adjusting the stop cam position

2. Loosen setscrews ⑤, and adjust the position of stop cam ⑦.

19 针和旋梭的关系 Needle-to-hook relation



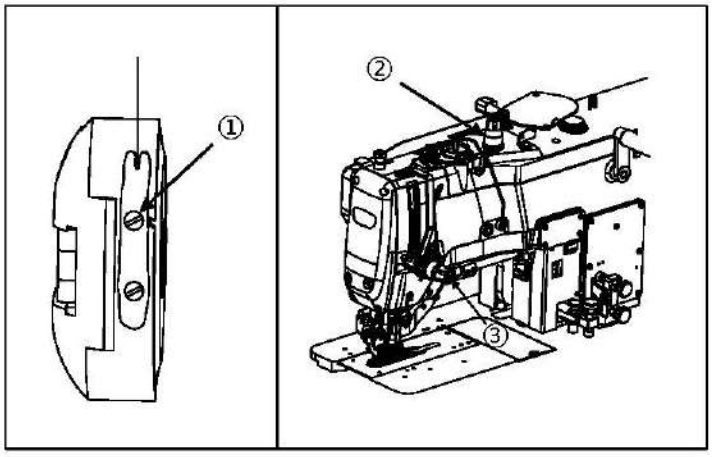
★ 机针和旋梭请按如下所述进行调节。

1、 把机针降到最低点，让机针落到针板的针孔中央。
2、 拧松针杆套管固定螺丝①。
(决定针杆的高度)
3、 用同步尺②的“1”的部分放入针板③和针杆④下端之间，并让针杆顶到标尺。
4、 拧紧针杆套管固定螺丝。
(决定旋梭的位置)
5、 用附属的棒扳手拧松两个旋梭轴接头固定螺丝⑤。
6、 向正规方向转动驱动皮带轮，针杆成为从最低点开始上升的状态。
7、 让旋梭尖⑥对准机针⑦的中心，旋梭尖和机针之间的间隙约 0.05mm，把旋梭轴接头固定螺丝拧紧。
(注意)发生跳针时，请让针杆的高度比同步尺“1”低 0.5mm 左右。

★ Set the needle to hook relation in the following way.

1. Bring down the needle bar to the lowest point when needle is coming down through the center of the needle hole on the throat plate.
2. Loosen needle bar connection screw ①， and adjust the height of the needle bar.
(Seeting the needle bar).
3. Insert the part "1" of timing gauge ② into the gap between the bottom end of needle bar ④ and throat plate ③.
4. Retighten the needle bar connection screw to adjust the position of the sewing hook.
(Seeting the hook).
5. Loosen setscrew ⑤ of the hook sleeve by the bar spanner supplied with the machine.
6. Rotate the driving pulley in the correct direction until the needle starts to go up from its lowest point.
7. Aligh blade point ⑥ of the sewing hook with the center of needle ⑦， and make adjustment so that a clearance of approx 0.05mm (1/64")is provided between the needle and the blade point of the hook. Then securely retighten the setscrew of the hook sleeve.
(NOTE): lf stitches are skipped. lower the needle bar by approx 0.5mm(1/64") from the timing gauge "1".

20 线张力 Thread tension



★ 直锁眼缝的线张力

1、 用梭壳张力螺丝①把底线张力调节 0. 15~0. 2N 左右。

2、 调整第一线张力器②缝制出漂亮的锯齿边缝那样的缝迹。如果背面线头露出的话，请调紧第一线张力器。

3、 对于平行部 A 的锯齿形状，请用第二线张力器③调节。

★ 锯齿边缝的线张力

1、用张力螺丝①把底线张力调节为 0. 4~0. 5N 左右。

2、 更换第一线张力器 ② 和第二线张力器③ 的调节弹餐。 (第二线张力器要稍弱一些）

3、 用第二线张力器③进行调节，不让缝纫完了后脱线。

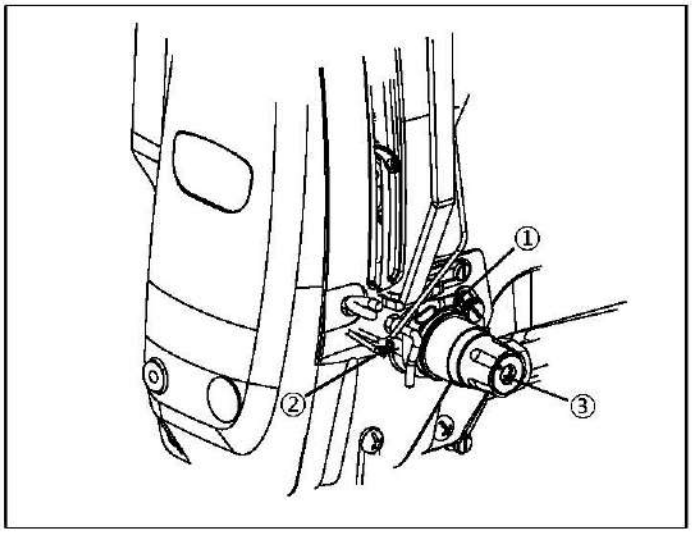
4、 用第一线张力器②调节平行部、加固缝部的缝迹。

★ Adjusting the thread tension for purl stitch:

1. Adjust the bobbin thread tension to approx. 15 to 20g by adjusting screw ① of the bobbin case.
2. Adjust tension controller No. 1② for proper needle thread tension so that the bar-tack part is formed by well-shaped whip stitches If the tension is too low bar tacking seam may form thread knots on the rear face of fabric.
3. Adjust tension controller No. 2 ③ for proper tension of the pallarel side seams by judging from the stitch formation.

★ Adjusting the thread tension for whip stitch:

1. Adjust the bobbin thread tension to approx 40 to 50g by adjusting screw ① of the bobbin case.
2. Exchange the adjusting springs of tension controllers No.1② and No. 2 ③ each other (the tension controller No. 2 will have a weak spring) .
3. Adjust tension controller No. 2③ to prevent ravelling off at the end of a seam.
4. The stitches of the parallel sides or bar-tack can be adjusted by tension controller No.1②.



★ 拉线弹簧（直锁缝）

把拉线弹簧①的拉线量调节成 8~10mm、把始动时的张力强度调节为 0. 1~0. 2N。

变更拉线弹簧的动作范围时，请拧松螺丝②, 把细螺丝刀插到线张力杆③的切缝处转动调节。

变更拉线弹簧的强度时，请在螺丝②拧紧的状 态下，把细螺丝刀插到线张力杆③的切缝处转 动调节。向右转动拉线弹簧和强度变大，向左 转动变弱。

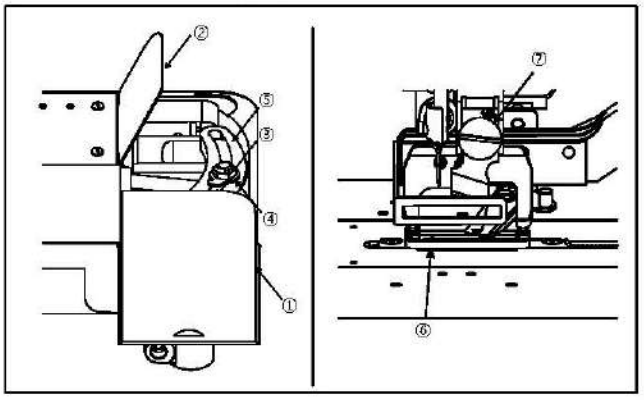
★ Adjusting the thread take-up spring (for purl stitch)

The suitable range of the stroke of thread take-up spring ① is from 6 to 8mm with a starting tension of 20 to 50g.

For adjusting the stroke of the thread take-up spring ,loose screw ② and insert a thin screwdriver into the slit of tension post③to turn the tension post.

To adjust the tension of the thread take-up spring insert a thin screwdriver into the slit of tension post③)to turn it,with screw ② tightened. The tension of the thread take-up spring increases when the tension post is turned clockwise,and decrease when turned counterclockwise.

21 缝边长度(送布量)的调节 Adjusting the overedging length (buttonhole length)



1、拉出外罩①, 就可以抬起外罩②.

2、用附属的扳手拧松螺母③, 把指针④对准送布曲柄⑤上希望的刻度（与切布刀宽度相同的尺寸）， 然后拧紧螺母③.请不要把螺母③拧下来。

3、进行试验缝制，微调整让切刀不切加固缝部。

★ 压脚的更换

请使用接近钮扣眼长度的压脚步⑥.

拧松压脚固定螺⑦, 就可以更换压脚。

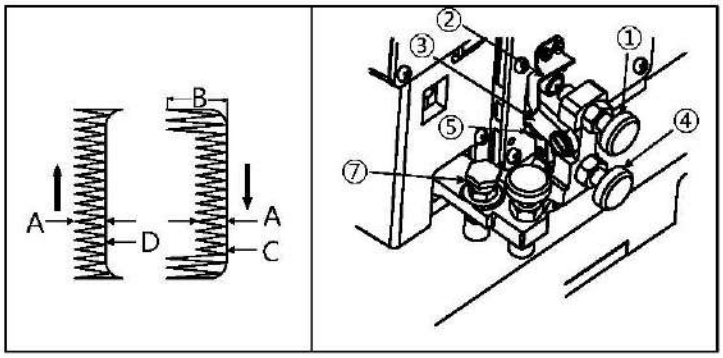
1. Pull out cover ①,and raise cover ②.
2. Loosen nut③by the spanner supplied with the machine, Set point④ to a desired length on scale (this length is the same with the knife width) ,and then retithten nut ⑤.
3. Through your trial sewing,adjust the overeding length accu rately to the extent that the bar tacking seams are not cut by the knife.

★ Changing the work clamp check

Use work clamp check ⑥ having the size nearly the same as that of a buttonhole length.

By removing setscrew⑦,a work clamp checks can be changed together with a work clamp check holder as a set.

22 锁眼宽度以及缝锁基准位置的调节 Adjusting the overeding width and overedging reference position



机针的摆动以机针摆动的右侧为基准。调整时请按照以下要领进行。

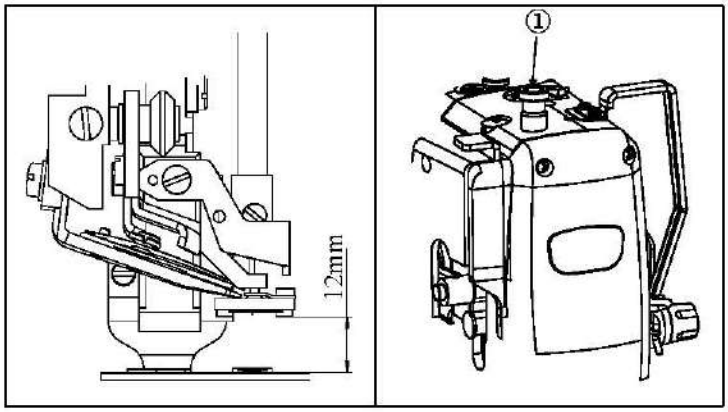
1、摆动宽度 A, 移动螺丝①把指针②对准刻度板③上希望的刻度。实际的摆动宽度是刻度的 1/2 的量（单位：mm）.

2、加固缝宽度 B, 移动螺丝④把指针⑤对准刻度板的指针② 指示的刻度，设定为摆动宽度的 2 倍。

3、右基线 C 的位置，移动螺丝⑥, 设定到切刀切不了线的位置。拧紧螺丝⑥右基线向左移动。
4、进行试验缝，以进行上述的微调整，
5、左基线 D 的位置，因变更摆动宽度的位置也不变动，所以不需调整。但是切刀切左基线时，拧紧螺丝⑦让其向左移动。

The needle swings from right to left with the right base line established as the reference position.
Perform the adjustment as follows:
1. To adjust stitch width A,screw in or out screw ①,and set pointer ② to a desired value on scale plate ③. The actually sewn stitch width will be the half of the set scale value (mm) .
2. For adjustment of bar tacking width B,screw in or out screw④,and set poiner ⑤to the value indicated by scale plate pointer ②,making the bar tacking width twice as large as the stitch width.
3. Adjust the position of right base line C by screwing in or out screw ⑥ so that it is kept away from the cutting line of the knife. As screw ⑥ is scerwed in,the right base line moves to the left.
4. Through yuor trial sewing,further perform fine adjustment.
5. It is not necessary to adjust the position of left base line D since it remains unchanged when the stitch width is changed. However,the left base line should be moved to the left by screwing in screw ⑦ if it is cut by the knife.

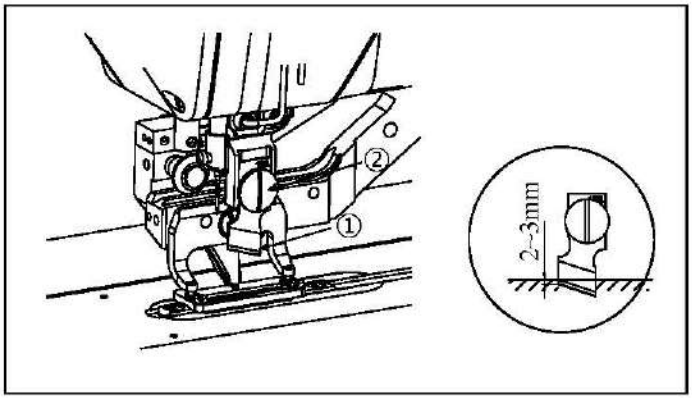
23 压脚的压力调整 Adjusting the presser bar pressure



压脚自动抬起时的压脚最大提升量为 12mm。布压脚的压力用压脚调节螺丝①调节。拧紧调节螺丝后，布压脚压力变大，布不容易出褶。

The presser bar maximum goes up 12mm when the presser foot lifted automatically.
To adjust the pressure applied by the presser bar to fabric,turn presser spring regulator ①. When the pressure is not enough to prevent fabric from puck- ering,turn regulator ① clockwise.

24 切刀的更换 Replacing the knife



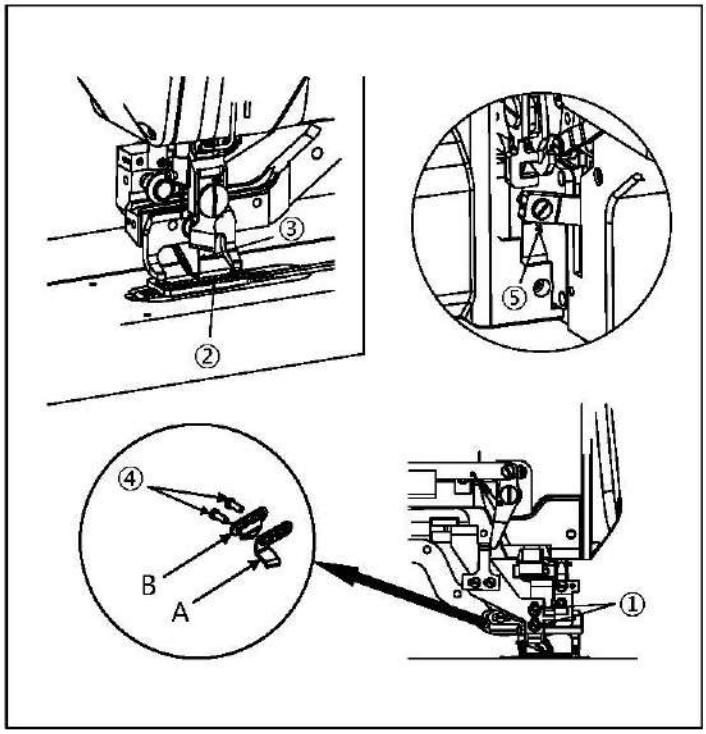
研磨切刀或更换新切刀时，请按照如下要领进行更换。
1、拧松切刀固螺钉②, 把切刀①和垫片一起卸下。
2、组装时，下降到切刀最低点，让切刀和护针器上面的距离为 2~3mm, 拧紧切刀固定螺丝。
（注意）请一定放上垫片，及切刀安装方向。

When sharpening or replacing the knife,remove it as follows:
1. Loosen setscrew ②,and remove knife ① together with the washer.
2. Attach the knife to the knife holder so that the

higher end of the slanted knife blade comes down 2 to 3mm above the surface of the throat plate when the knife if brought down to the lowest position.

(NOTE) : Do not forget to install the washer when retightening the setscrew, and knife installation direction.

25 上线剪刀的调整 Adjustment of the needle thread trimmer



★剪刀的安装

拧松螺丝①, 下降压脚使压脚②和剪刀③不相碰。上线可以剪短。

但是缝纫布层时，压脚会倾斜所以把剪刀的位置安得稍高一点。

★剪刀关闭的同步时间

剪刀伸到最长时，调整剪刀关闭的同步时间。拧松螺丝④, 把上线剪刀动作板A前后移动来调节。往前移动关闭的同步时间推迟，同时关闭量也变少。

（注意）剪刀关闭之后，请确认还应有 0. 3~0. 5 mm 左右的富裕。没有关闭富裕时，上线剪刀动作板相接触的压脚提升拔杆⑤变重。

★剪刀张开的同步时间

调整剪刀使剪刀在从开始缝的 2. 5~3mm左右的地方，渐渐的开始张开。拧松螺丝④,前后移动上线剪刀动作板B来进行调节。向前移动张开时间提前。

（注意）定位的上线剪刀动作板 A 一定不能偏斜。

★ Attaching the trimmer

Loosen setscrew ①,and adjust the height of trimmer ③. Set the height of trimmer ③ as low as possible, provided that it provided that it does not touch work clamp check②,in order to minimize the length of remaining thread on the needle after trimming

★ Closing timming of the needle thread trimmer

Adjust the closing timing of the needle thread trimmer so that the trimmer completely closes when it advances farthest. To perform the adjustment,loosen screw④,and move needle thread trimmer driving plate A back and forth, When the needle thread trimmer driving plate is moved towards you,the closing timing is delayed with reduced amount of closing.

(NOTE) Confirm that an allowance of 0. 3 to 0. 5mm is left between the blades of the trimmer when the trimmer has completely closed.

If there is no such allowance the trimmer would interfere with the operation of the needle thread trimmer driving plate,preventing smooth movement of lifting lever ⑤.

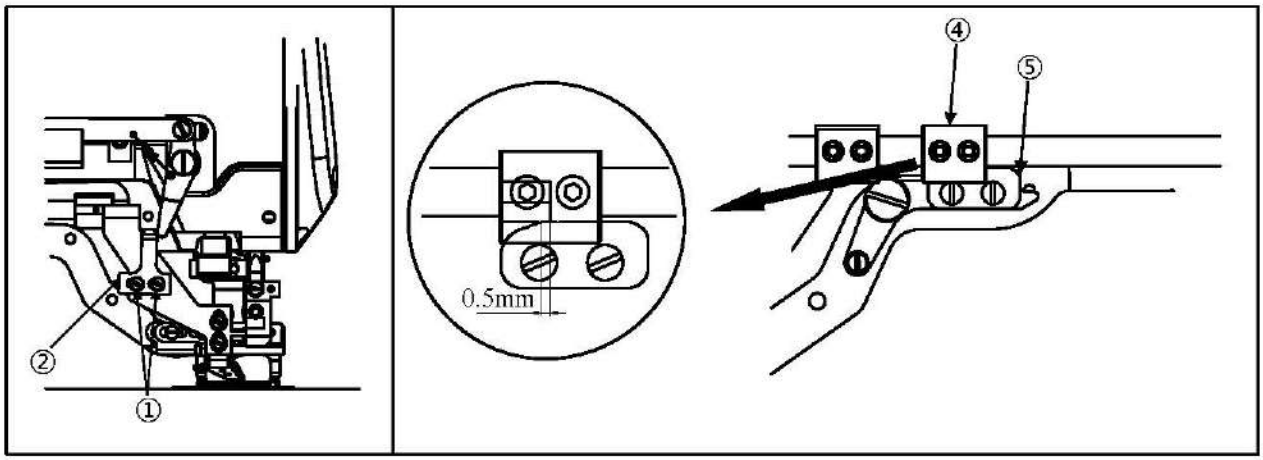
★ Opening timing of the needle thread trimmer

Adjust the timing of the thread trimmer so that the trimmer begins to open gradually at a distance of approx. 2. 5 to 3mm (3/32"to 1/8") from the start.

To pertorm the adjustment loosen screw ④,and move needle thread trimmer driving plate B back and forth. As it movestowards you,the trimmer begins to open earlier.

（NOTE) Take care not to cause the already fixed needle thread trimmer driving plate A to get out of position.

26 上线切线动作曲轴和限制板的调整 Adjustment of needle thread trimmer holder and limiting plate



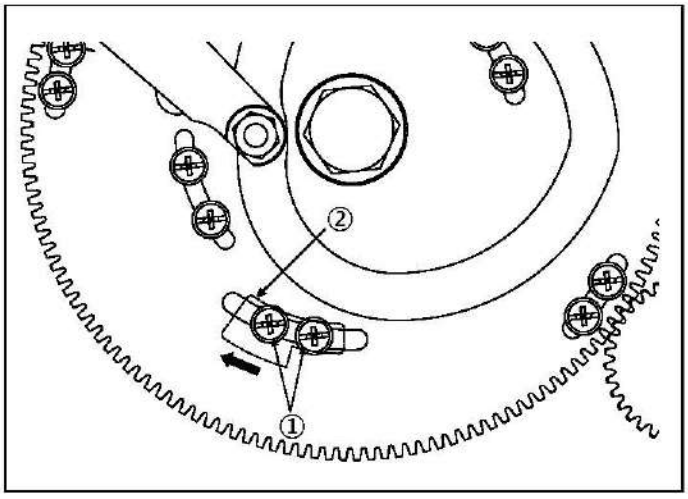
缝纫机低速起动时， 拧松固定螺丝①，让限制板②顶到阻挡曲柄③。

上线切刀张开时，让上线切线动作曲柄④和动作凸轮⑤咬合 0. 5mm。

Loosen setscrew ①,and install and adjust limiting plate ② so that it comes in contact with the blocking arm ③ at the tim e of slow start of the machine.

Needle thread trimmer holder ④ should be installed in such manner that it engages with cam ⑤ by 0. 5mm (1/64") when the needle thread trimmer opens.

27 切刀落刀时期的调整 Timing for dropping the knife



拧松固定螺丝①, 向箭头方向移动切刀动作凸轮②, 切刀落刀时间提前，反则推迟。缝纫机停止的 2~3 针前让切刀落刀。

Loosen screw ①,and move knife tripping segment ②in the direction shown by the arrow,and the knife will drop earlier.adjust it so the knife drops two to three stitches before the machine stops.

28 有关缝制的故障、原因及处理方法 Trouble,cause,and remedy

现象	原因	处理方法
1、上线断线	(1) 第二线张力器过强。 (2) 拉线弹簧的强度、移动量过大。 (3) 旋梭尖有刺或有伤痕。 (4) 旋梭不同步。 (5) 线道有伤痕。 (6) 机针过细。	• 减弱第二线张力器的张力。 • 减弱拉线弹簧的弹力，或缩小移动量。 • 磨平旋梭尖，或更换旋梭。 • 用同步尺调整旋梭的同步。 • 用布或锉刀磨平。 • 更换成粗针。
2、上线脱线	(1) 上线切线剪打开过早。 (2) 放下压脚上线切刀便打开。 (3) 开始缝时不能为直锁眼缝。 (4) 上线的穿线方法不对。	• 往后移动上线切线动作板B。 • 往后移动上线切线动作板B。 • 减弱第一线张力器的张力。 • 正确穿线。
3、平行部缝迹不整齐	(1) 第二线张力器过弱。 (2) 挑线簧过强，活动范围小。 (3) 底线张力过强。	• 增强第二线张力器。 • 重新调整挑线弹簧。 • 减弱底线张力。 (锯齿边缝0.15~0.2N)
4、始缝缝迹不整齐	(1) 第一线张力器过弱。 (2) 上线切线位置过高。 (3) 挑线簧活动范围过大。	• 增强第一线张力器。 (0.15~0.3N) • 降低高度，但不要碰到压脚。 • 缩小挑线簧的活动范围，增大弹簧压力。
5、第一加固缝部上线从布的下面堆线	(1) 第一线张力器过弱。 (2) 底线张力过强。	• 增强第一线张力器。 • 减弱底线张力。 (0.15~0.2N)
6、缝迹鼓起	(1) 底线张力过弱。 (2) 底线从梭壳脱出。	• 加强底线张力。 • 正确的穿线。
7、跳线	(1) 压脚大，纽扣孔小。 (2) 布料薄。	• 换成小压脚。 • 推迟机针和旋梭的同步时间。 (把针杆约下降0.5mm左右)

Trouble	Cause	Remedy
1.Need le thread is broken.	(1) The tension of the tension controller No.2 is too tight. (2) The tension or the stroke of the take-up spring is too great. (3) Blade point of sewing hook has burr or scratches. (4) Poor tirning of the sewing hook. (5) The thread path has scratches. (6) The needle is too thin.	● Decrease the tension of the tension controller No.2 ● Decrease the tension or the stroke of the take-up spring. ● Buff the blade point of the sewing hook or replate the sewing hook. ● Readjust the sewing hook s timing by the timing gauge. ● Buff the thread path by cloth files etc. ● Replace by a thick needle.
2.Thread slips out of the needle.	(1) The needle thread trimmer opens too early. (2) The needle thread trimmer opens when the work clamp check is comming down. (3) The whip stitch is not formedat the start of sewing. (4) Wrong threading.	● Move back the needle thread trimmer driving plate B. ● Move back the needle thread trimmer driving plate B. ● Decrease the tension of the tension controller No.l. ● Perform correct threading.
3.Wobbling stitches are formed in the. overedging seams.	(1) The tension disc No.2 is too loose. (2) The tension and stroke of the take-up spring is not enough. (3) Bobbin thread tension is too high.	● Tncrease the tension of the tension disc No.2 ● Readjust the take-up spring. ● Decrease the bobbin thread tension (15 to 20g for purl stitches).
4. Wobbling stitches are formed at the start of sewmg.	(1) The tension disc No.l is too loose. (2) The position of the need le thread trimmer is too high. (3) The stroke of the take-up spnng IS too great.	● Increase the tension of the tension disc No. l (15 to 30g) ● Lower the trimmer as low as possible provided it does not come in contact w ith the work clamp check . ● Decrease the stroke of the take- up spring and increase the spring pressure.
5. The needle thread at the first bar tacking comes out and lumps on the bottom of cloth.	(1) The tension disc No.1 is too loose. (2) The bobbin thread tension is too high.	● Tncrease the tension of the tension disc No.1. ● Decrease the bobbin thread tension (15 to 20g).
6.Stitches float over cloth.	(1) Bobbin thread tension is not enough. (2) Bobbin thread slips out of the thread path 00 the bobbin case.	● Increase the bobbin thread teoslOn. ● Properly thread the bobbio case.
7. Stitches are skipped .	(1) The work clamp check is too large for the buttonhole. (2) The cloth is made of light-weight materials .	● Change the work clamp check with a smaller one. ● Delay the time of the needle and the sewing hook . (Lower the needle bar by approx. O.5mm (1/2"))